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10/531,765	04/19/2005	Jean Laurencot	LAURENCOT2	3764

7590 03/02/2011  
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EXAMINER
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LU, JIPING

ART UNIT	PAPER NUMBER
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3743

MAIL DATE	DELIVERY MODE
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03/02/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/531,765	<b>Applicant(s)</b> LAURENCOT, JEAN	
	<b>Examiner</b> Jiping Lu	<b>Art Unit</b> 3743	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 8-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

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## **DETAILED ACTION**

### **Continued Examination Under 37 CFR 1.114**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/16/2010 has been entered.

### **Claim Status**

2. Claims 1-7 are cancelled. Claims 8-23 are now in the case.

### **Claim Rejections - 35 USC § 112**

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 8-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed limitation regarding “running a high-temperature heat-treatment cycle incorporating increases in temperature above 100 degrees Celsius governed as a function of

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....the load of ligneous material” in claim 8 is new matter which is not supported in the originally filed specification. Examiner disagrees that lines 25-28 of page 4, in the table at the bottom of page 8, and lines 9 to 12 of page 10 support the claimed “running a high-temperature heat-treatment cycle incorporating increases in temperature above 100 degrees Celsius”. Lines 25-28 of page 4 and lines 9 to 12 of page 10 disclose that “progression to a level at least equal to 100 degrees Celsius is permitted only if the volume of the enclosed space contains an oxygen content of below 3%” and “progression from the level of 100 degrees Celsius is preferably subject to the condition that the volume of the enclosed space contains less than 3% *oxygen*”. Lines 15-18 of page 8 disclose that the mode of operation illustrated in the table is for a woody material such as wood with a moisture content of 12 to 14%. It is clear according to above disclosures, a high-temperature heat-treatment cycle incorporating increases in temperature above 1000 degrees Celsius has been run under certain conditions, i. e. oxygen content of below 3%, moisture content of 12 to 14%. Therefore, the specification does not support the claimed “running a high-temperature heat-treatment cycle incorporating increases in temperature above 100 degrees Celsius governed as a function of ....the load of ligneous material” in claim 8.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 8-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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The claimed limitation of “above 100 degrees Celsius” in claim 8 contains no upper limit and thus renders the claim indefinite. What if the temperature reaches 2000 °C, does the claimed wood during operation still work?

### **Claim Rejections - 35 USC § 103**

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 8-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenau (U.S. Pat. 4,356,641) in view of Marsh (U.S. Pat. 3,131,034) or Muehlboeck et al. (EP 1118828 A1).

Rosenau teaches a method of treating top and bottom sealed woody material within two chambers (at 20, 21 and at 22, 23). The high temperature heat treatment is controlled by monitoring means 15, humidity sensors 13, 14, 16-18, temperature sensors 20-23, heating means 12 and circulating heat transfer fluid 19. The heating method is same as claimed in claim 8. The sensors 13-23 permanently monitor and measure conditions and compare data in each chamber. After the high temperature heat treatment, the resultant woody material will possess or preserve some kind of physical properties with mechanical, acoustic and insulating characteristics. Based on the data received, the operations of heater 12, blower 19 and heating cycle regulator 15 are capable to be adjusted and based on the claimed formula (claim 8, lines 14-24). Rosenau does not discuss any wood treatment above 100 °C. Marsh teaches a wood drying method which reaches 100 °C (col. 9, line 51 to col. 11, line 75). Muehlboeck teaches a concept of heat treating wood to a temperature above 100 °C (see abstract). Therefore, it would have been obvious to

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one having ordinary skill in the art at the time the invention was made to operate the wood drying process of Rosenau above 100 °C as taught by Marsh or Muehlboeck et al. in order to speed up a drying cycle. With regard to the claimed mathematical functions and formula, they are deemed to be conventional, common practice and common sense in the heating art.

Therefore, it would have been obvious to one skill in the art at the time the invention was made to govern the rise in temperature as a function of the behavior of the load of woody material in terms of its thermal conductivity and as a function of equilibrium between the flow rate and the speed of the heat-transfer fluid between the two chambers in order to obtain a predictable woody material treating result. This a common practice. The thermal conductivity of the loaded woody material, e.g. lumber, is depending on the thickness of the wood. The more woody material to be treated will meet with less thermal conductivity and will take a longer time to treat. The flow rate is dependent upon the speed of the air blower 19. The slower the blower speed will require more time and more heat output from heater 12 to treat the wood material. The heat transfer fluid speed is dependent upon the blower speed 19 and the heat source output 12. The slower the blower speed and lesser heat output will require more time to treat the woody material.

Therefore, the claimed running of heating cycle at lines 14-24 of claim 8 is nothing but common sense and well known in the heating art. In other words, the slower the blower speed and the lowering of heat output and increase of wood load to be treated (decrease thermal conductivity) will slow the operating running cycles of the heating. Conversely, the faster blower speed, the higher heat output source and the lesser workload (increase thermal conductivity) will hasten the operating running heating cycles. Regarding the term “equilibrium”, it is nothing but a balance between two factors of air flow rate and the heat-transfer fluid speed. Such claimed

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“equilibrium” has already taken in consideration in the examples given above. With regard to the claimed characteristics of the final product (last 3 lines of claim 8), this is an inherent outcome because all woody material products will possess some kind of characteristics in its mechanical, acoustic and insulating properties due to their original treatment process. If a woody material was heat treated by an inferior or defective treatment process, the characteristics or properties of the end product will be severely affected in physical, acoustic and insulating characteristics or properties. With regard to claims 12-22 the claimed mathematical formula and temperature ranges are deemed to be an obvious matter of operation in order to obtain an optimal result. The claimed mathematical formula in claims 12-22 is nothing but the optimal heating running cycles based on the common sense practice as explained above.

9. Claims 8-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weis (U. S. Pat. 3,744,144) in view of Marsh (U.S. Pat. 3,131,034) or Muehlboeck et al. (EP 1118828 A1).

Weis teaches a method of treating top and bottom sealed woody material within two chambers (at 30 and at 44). The high temperature heat treatment is controlled by monitoring means 60, humidity sensors 27, temperature sensors 70, 76, heating means 26 and circulating heat transfer fluid 24. After the high temperature heat treatment, the resultant woody material will posses or preserve some kind of physical properties with mechanical, acoustic and insulating characteristics. The heating method is same as claimed in claim 8. Weis does not discuss any wood treatment above 100 °C. Marsh teaches a wood drying method which reaches 100 °C (col. 9, line 51 to col. 11, line 75). Muehlboeck teaches a concept of heat treating wood to a temperature above 100 °C (see abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to operate the wood drying process of

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Weis above 100 °C as taught by Marsh or Muehlboeck et al. in order to speed up a drying cycle.

With regard to the claimed mathematical functions and formula (lines 14-24 of claim 8), they are deemed to be conventional and well known in the heating art. Therefore, it would have been obvious to one skill in the art at the time the invention was made to govern the rise in temperature as a function of the behavior of the load of woody material in terms of its thermal conductivity and as a function of equilibrium between the flow rate and the speed of the heat-transfer fluid between the two chambers in order to obtain a predictable woody material treating result. This a common practice and a common sense. The thermal conductivity of the loaded woody material 22, e.g. lumber, is depending on the thickness of the wood 22. The more woody material to be treated will meet with less thermal conductivity and will take a longer time to treat. The flow rate is dependent upon the speed of the air blower 24. The slower the blower speed 24 will require more time and more heat output from heater 26 to treat the wood material 22. The heat transfer fluid speed is dependent upon the blower speed 24 and the heat source output 26. The slower the blower speed 24 and lesser heat output 26 will require more time to treat the woody material 22. Therefore, the claimed running of heating cycles as stated at lines 14-24 of claim 8 is nothing but common sense and well known in the heating art. In other words, the slower the blower speed and the lowering of heat output and increase of wood load to be treated (decrease thermal conductivity) will slow the operating running cycles of the heating. Conversely, the faster blower speed, the higher heat output source and the lesser workload (increase thermal conductivity) will hasten the operating running heating cycles. Regarding the term “equilibrium”, it is nothing but a balance between two factors of air flow rate and the heat-transfer fluid speed. Such claimed “equilibrium” has already taken in consideration in the



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examples given above. With regard to the claimed characteristics of the final product, (last 3 lines of claim 8), this is an inherent outcome because all woody material products will possess some kind of characteristics in its mechanical, acoustic and insulating properties due to their original treatment process. If a woody material was heat treated by an inferior or defective treatment process, the characteristics or properties of the end product will be severely affected in physical, acoustic and insulating characteristics or properties. With regard to claims 12-22 the claimed mathematical formula and temperature ranges are deemed to be an obvious matter of operation in order to obtain an optimal result. The claimed mathematical formula in claims 12-22 is nothing but the optimal heating running cycles based on the common sense practice as explained above.

10. Claims 8-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Little (U. S. Pat. 5,325,604) in view of Marsh (U.S. Pat. 3,131,034) or Muehlboeck et al. (EP 1118828 A1).

Little teaches a method of treating top and bottom sealed woody material 22 within two chambers (at 70 and at 72). The high temperature heat treatment is controlled by monitoring means 30, humidity sensors 76, temperature sensors 74, heating means 32 and circulating heat transfer fluid 40. The heating method is same as broadly claimed in claim 8. After the high temperature heat treatment, the resultant woody material will possess or preserve some kind of physical properties with mechanical, acoustic and insulating characteristics. Little does not discuss any wood treatment above 100 °C. Marsh teaches a wood drying method which reaches 100 °C (col. 9, line 51 to col. 11, line 75). Muehlboeck teaches a concept of heat treating wood to a temperature above 100 °C (see abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to operate the wood drying process of

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Little above 100 °C as taught by Marsh or Muehlboeck et al. in order to speed up a drying cycle.

With regard to the claimed mathematical functions and formula (lines 14-24 of claim 8), they are deemed to be conventional and well known in the heating art. Therefore, it would have been obvious to one skill in the art at the time the invention was made to govern the rise in temperature as a function of the behavior of the load of woody material in terms of its thermal conductivity and as a function of equilibrium between the flow rate and the speed of the heat-transfer fluid between the two chambers in order to obtain a predictable woody material treating result. This is a common practice and common sense. The thermal conductivity of the loaded woody material, e.g. lumber 22, is depending on the thickness of the wood 22. The more woody material to be treated 22 will meet with less thermal conductivity and will take a longer time to treat. The flow rate is dependent upon the speed of the air blower 38. The slower the blower speed 38 will require more time and more heat output from heater 32 to treat the wood material 22. The heat transfer fluid speed 40 is dependent upon the blower speed 38 and the heat source output 32. The slower the blower speed 38 and lesser heat output 32 will require more time to treat the woody material 22. Therefore, the claimed running of heating cycles at lines 14-24 of claim 8 is nothing but common sense and well known in the heating art. In other words, the slower the blower speed 38 and the lowering of heat output 32 and increase of wood load to be treated 22 (decrease thermal conductivity) will slow the operating running cycles of the heating. Conversely, the faster blower speed, the higher heat output source and the lesser workload (increase thermal conductivity) will hasten the operating running heating cycles. Regarding the term “equilibrium”, it is nothing but a balance between two factors of air flow rate and the heat-transfer fluid speed. Such claimed “equilibrium” has already taken in consideration in the

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examples given above. With regard to the claimed characteristics of the final product, (last 3 lines of claim 8), this is an inherent outcome because all woody material products will possess some kind of characteristics in its mechanical, acoustic and insulating properties due to their original treatment process. If a woody material was heat treated by an inferior or defective treatment process, the characteristics or properties of the end product will be severely affected in physical, acoustic and insulating characteristics or properties. With regard to claims 12-22 the claimed mathematical formula and temperature ranges are deemed to be an obvious matter of operation in order to obtain an optimal result. The claimed mathematical formula in claims 12-22 is nothing but the optimal heating running cycles based on the common sense practice as explained above.

11. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenau (U. S. Pat. 4,356,641) or Weis (U. S. Pat. 3,744,144) or Little (U. S. Pat. 5,325,604) in view of Marsh (U.S. Pat. 3,131,034) or Muehlboeck et al. (EP 1118828 A1) as applied to claim 8 above, and further in view of Norz et al. (U. S. Pat. 5,001,845).

The method of Rosenau or Weis or Little as modified by Marsh or Muehlboeck et al. as above includes all that is recited in claim 23 except for a step of monitoring oxygen content of the treatment space. Norz et al. teaches a concept of monitoring oxygen content of the treatment space by oxygen sensor for safety purposes (col. 3, lines 28-34). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the method Rosenau or Weis or Little to include a step of monitoring oxygen content of the treatment space as taught by Norz et al. in order to improve the safety.

### **Response to Arguments**

**12.** Applicant's arguments filed on 12/16/10 with respect to claims have been considered but are not persuasive to overcome the rejection. First, the examiner appreciates that the applicant's acknowledgement of the term "ligneous material" is same as the woody material as shown by the prior art references as applied. This issue is now resolved. Second, the claims presented fail to define over the prior art references. The applicant argues that the broadly claimed formula (lines 14-24 of claim) is not supported by any documents. The claimed heating process is solely based the formula as claimed on lines 14-24 of claim 8 and carried out by the old and known lumber heating apparatus (claim 8, lines 1-13). All prior art references applied pertain to the high temperature heat treatment of woody or ligneous material same as the applicant's. Each and every piece of the prior art references does show the claimed well known lumber heating device like, two chambers, monitoring means, humidity sensors, temperature sensors, heating means, blower, regulator, heat transfer fluid, lumbers to be treated identical as claimed. Therefore, to operate these well known lumber heating devices in accordance with lines 14-24 of claim 8 is strictly a common sense as explained in the rejection above. Third, the applicant also argues that the examiner's reasoning based on common sense and common practices is conclusory. The examiner disagrees. For example, the cited prior art patents to Marsh, Nuhlbock, Brunner, Weis, Rosenau and Little clearly show and teach the control of woody drying operation is based on the same mathematical formula as claimed. The prior art patents so suggest that the wood drying cycles are based on a function of the behavior of the load of woody material in terms of its thermal conductivity and as a function of equilibrium between the flow rate and the speed of the heat-transfer fluid between the two chambers in order to obtain a predictable woody material

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treating result. The thermal conductivity of the loaded woody material to be treated is based on the thickness of the wood. The more woody material to be treated will meet with less thermal conductivity and will take a longer time to treat. The flow rate is dependent upon the speed of the air blower in the drying chamber. The slower the blower speed will require more time and more heat output from heater to treat the wood material. The heat transfer fluid speed is dependent upon the blower speed and the heat source output. The slower the blower speed and lesser heat output will require more time to treat the woody material. Therefore, the claimed running of heating cycles as stated at lines 14-24 of claim 8 is nothing but common sense and well known in the heating art. In other words, the slower the blower speed and the lowering of heat output and increase of wood load to be treated (decrease thermal conductivity) will slow the operating running cycles of the heating. Conversely, the faster blower speed, the higher heat output source and the lesser workload (increase thermal conductivity) will hasten the operating running heating cycles. Regarding the term "equilibrium", it is nothing but a balance between two factors of air flow rate and the heat-transfer fluid speed. Such claimed "equilibrium" has already taken in consideration in the examples given above. With regard to the claimed characteristics of the final product, (last 3 lines of claim 8), this is an inherent outcome because all woody material products will possess some kind of characteristics in its mechanical, acoustic and insulating properties due to their original treatment process. If a woody material was heat treated by an inferior or defective treatment process, the characteristics or properties of the end product will be severely affected in physical, acoustic and insulating characteristics or properties. With regard to claims 12-22 the claimed mathematical formula and temperature ranges are deemed to be an obvious matter of operation in order to obtain an optimal result. The claimed

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formula contains nothing but control or adding of heating cycles in response to the rise in temperature as a function of the behavior of the load of woody material in terms of its thermal conductivity and as a function of equilibrium between the flow rate and the speed of the heat-transfer fluid between the two chambers in order to obtain a predictable woody material treating result. The claimed mathematical formula is nothing but the optimal heating running cycles based on the common sense practice as explained above. It is noted that the applicant has not denied or rebutted the examiner's analysis of the teachings from the cited prior art patents. The applicant merely argues the examiner's analysis based on common sense and common practice is conclusory. The applicant still did not respond or dispute the examiner's interpretation of the operations in the prior art patents. It is the examiner's position that the claimed heating formula to obtain an optimal result is obvious because the results would have been predictable (see KSR International Co. v. Teleflex, Inc. 82 USPQ 2d 1385 (2007)). The examiner urges the applicant to study the cited prior art patents to Marsh, Nuhlbock, Brunner, Weis, Rosenau and Little and present the rebuttals, if any, based on what the prior art patents. Finally, the claimed physical characteristics of the final end product of the woody material, this is deemed to be inherent. After the high temperature heat treatment, the resultant woody material will possess or preserve some kind of physical properties with mechanical, acoustic and insulating characteristics. The broad claims fail to recite what the physical characteristics are. What is the mechanical, acoustic and insulating property of the woody material before treatment and after treatment? The affidavit filed 5/4/2010 has been considered. The applicant's own Rule 132 Affidavit is moot because the applicant has amended the claim to include what is meant by "high temperature". This is the proper way to define inventions. Since only claims define inventions, the argued

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difference should and must be defined in the claims. Claim 1 is inconsistent with what the applicant now argues in the Rule 132 Affidavit because the Affidavit requires “high temperature” must be at least equal to 190<sup>0</sup>C. Claim 1 now merely calls for “above 100<sup>0</sup>C”. Claim 1 includes a temperature between 100<sup>0</sup>C to 190<sup>0</sup>C that is not deemed be a high temperature according to the Affidavit.

### **Conclusion**

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jiping Lu whose telephone number is 571 272 4878. The examiner can normally be reached on Monday-Friday, 9:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, KENNETH RINEHART can be reached on 571-272-4881. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jiping Lu/

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Primary Examiner  
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J. L.